

REMARKS

The Examiner's non-final Office Action of February 13, 2004 has been received and its contents reviewed. Accordingly, claims 1, 2, 7 and 10 have been amended, new claim 24 added and claim 6 has been canceled. Claims 1-5, 7-24 are currently pending with claims 11-23 having been withdrawn as being directed to a non-elected invention. Claims 1, 7 and 24 are independent. With regard to new claim 24, support for the features of the claim can be found at least in the specification at Figures 5-8b and page 26, line 16, to page 30, line 8. The Applicants respectfully request reconsideration of the above-identified application, in view of the above amendments and for the reasons to follow.

With regard to the Examiner's formality objection to the specification, the above amendment to the title is viewed as satisfying the requirement for a more descriptive title, and, therefore, it is respectfully requested that the objection be withdrawn.

Referring now regard to the Examiner's rejection of:

Claims 1-10, under § 103(a), as being obvious in view of the combination of teachings of the Medina ('530) and Riegl ('567),

this rejection is traversed. Specifically, the rangefinder of claim 1 as presently amended includes the following features:

a light source for projecting the light on the object;

a shutter positioned between the light source and the object which can open and close freely and blocks the light that has been projected from the light source when closed;

a camera for receiving the part of the projected light that has been reflected from the object;

a distance-measuring sensor by measuring the distance to the object; and

a controller for controlling optical output power of the light source and/or exposure conditions of the camera based on range information about the object,

wherein the controller uses the output of the distance-measuring sensor as an item of the range information about the object, and

wherein the controller selectively controls the open and closed states of the shutter. (Emphasis added)

A review of the Medina and Riegl references reveals that, contrary to the Examiner's assertion, neither reference alone or in a combination teaches or suggests the above features. Specifically, Medina teaches an apparatus for creating three-dimensional images of an object on a display system 19 in which a shutter 24 is positioned between objects 15,16 and the detector camera 13 such that the reflected light 28 from the object is modulated by the opening and closing of shutter 24 in accordance with a waveform resulting from the reflected light pulses 28. This apparatus and process enables the distance from the object to be displayed as a variation of intensity of reflected light onto each pixel 27 of the detector camera 13. This system does not, as the Examiner notes, teach or suggest any need for a means of controlling the pulsing light source, i.e., flash lamp or laser, according to the range information, i.e., distance, of object from the detector. The system of Medina also does not teach or suggest:

1) "the placement of the shutter between light source and the object" which is disclosed in the instant specification (Embodiment 1) to provide the benefit to objects very close to the light source of a closed shutter which protects the objects from the optical power of the light source, or

2) a "controller which uses the output of the distance-measuring sensor as an item of the range information about the object", and which "selectively controls the open and closed states of the shutter" as presently claimed.

To remedy these deficiencies, the Examiner relies upon the Riegl reference which is asserted to be in a related art, but is in fact a range finder utilizing laser light to calculate distance to an object. The patentee teaches (column 5, line 21, to column 7, line 8) controlling the laser for safety reasons and for determining the accuracy of the distance measurement, i.e., the longer rise time constants (of laser operation) and higher time constants for the input circuit enable greater accuracy in distance measurement with a favorable signal-to-noise ratio. The apparatus and process of capturing three-dimensional images of an object of Medina has no concern for the accuracy of the distance to an object, but instead only that the image be displayed with a degree of three-dimensions to the viewer. Further, certainly Riegl does not suggest that the distance measurement apparatus therein can be used in an apparatus for acquiring three-

dimensional images of an object. Therefore, without some reason or motivation for modifying the teachings of Medina to include a control of the light source, a *prima facie* case of obviousness has not been established with regard to the claim 1.

Further, even if combined, i.e., provide the apparatus of Medina with a rangefinder device of Riegl for controlling the light source, such a combination would not yield the features of instant claims 1 or 7. That is, the combination would not teach one of ordinary skill in the prior art to place the shutter 14 of Medina between the light source 11 and objects 15,16 as is presently claimed.

For the above reasons, the rejection of claims 1-10, under § 103(a), based upon the teachings of Medina and Riegl is no longer appropriate and must now be withdrawn.

While the present application is now believed to be in condition for allowance, should the Examiner find some issue to remain unresolved, or should any new issues arise, which could be eliminated through discussions with Applicants' representative, then the Examiner is invited to contact the undersigned by telephone in order that the further prosecution of this application can thereby be expedited.

Respectfully submitted,

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